Abstract

An architecture, design, and realization for providing Quality of Service (QoS) to Internet Protocol (IP) networks based on a three-class differentiated service scheme where the service provider uses a resource management system and a schedule optimizer to enable the optimal use of bandwidth and buffer resources at each node or router along the various links between the ingress and egress points in a network. The resource reservation system checks to determine if sufficient bandwidth resources are available along the path requested by the customer for a particular class. The schedule optimizer ensures that sufficient buffer resource allocations and parameter settings are made to optimally reach the predetermined QoS criteria for each of the three classes. The system also contains a mechanism supporting resource reservations providing additional resources along alternative paths if the selected path links fail in the network.